



**World Stroke
Organization**



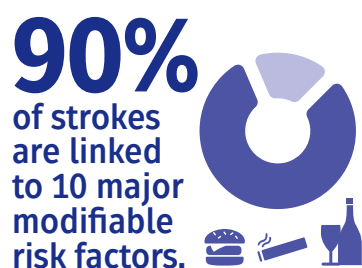
**A Life Free from Stroke -
World Stroke Organization's
Global Policy Agenda**

one voice

Today, **100 million people** in the world live with the consequences of a stroke and the annual costs are nearing a staggering trillion dollar mark: The World Stroke Organization is calling for action.

Key messages and top WSO priorities

Facts and figures



Stroke is the second leading cause of death and disability worldwide.

In 2019 over **12M** people worldwide had a stroke, **6.5M** died from a stroke and stroke accounted for 143M disability-adjusted life years lost.

Stroke units are available in **91% of high-income countries** surveyed by WSO in contrast to **18% of low-income countries**. Currently, acute stroke treatments (clot-busting technologies) are available in **~60% of high-income countries compared to 26% of low-income countries**.



Advocacy priorities

Advocacy priority 1 – Stroke Prevention

Stroke is a vascular catastrophe to the brain and is caused by an occlusion or rupture of a brain vessel causing acute paresis, disturbance of motor coordination and dexterity mostly on one side of the body. Speech disturbance and visual defects often occur. While treatment has made great progress, the mainstay of coping with this disabling or deadly disease remains prevention.

There is a potential to reduce the number of strokes substantially. **Cutting Stroke in Half** is WSO's flagship advocacy initiative with a focus on the global prevention of stroke and dementia. The effective implementation of population-wide strategies could prevent over half of stroke and cardiovascular disease events.

Guiding principles include reducing exposure to stroke risk factors; implementing and promoting motivational mobile technologies; facilitating access to low dose combination medications in one polypill for specific groups and investing in the training and deployment of community health workers.

Advocacy priority 2 – Stroke Recognition

Improving public awareness of stroke and rapid recognition of the symptoms of stroke and of the benefits of timely hospital admission increases an individual's chances of preventing death and disability. The WSO "Save Minutes. Save Lives - #Precioustime" campaign aims to raise awareness of stroke warning signs and the critical importance of seeking emergency medical care if stroke is suspected.

Advocacy priority 3 – Stroke Services

Rapid hospital admission and stroke unit care leads to better patient outcomes. Well-organized stroke care can significantly (up to 30%) reduce post-stroke morbidity and mortality. Clot-busting drugs applied in a timely manner (within a few hours after onset) increase the chance of a good outcome by a further 30%. Clot retrieval treatment increases the chance of a good outcome by more than 50%. All acute patients with stroke should therefore be treated at stroke units and have access to evidenced based therapies.

WSO advocates for the context-specific implementation of its *Global Stroke Services Guideline and Action Plan* and its companion *WSO Roadmap to Delivering Quality Stroke Care* throughout the world.



Today, there are **100M stroke survivors around the world** –

a figure which will continue to rise in the coming decades.



Advocacy priority 4 – Life After Stroke

Many stroke survivors face significant challenges that include physical disability; communication difficulties; changes in how they think, feel and act; alongside loss of work, income, independence, and social networks. Ensuring people affected by stroke have access to neuro-rehabilitation units and when needed to long-term rehabilitation and support that is essential for health, well-being and social participation. WSO invests in and advocates for the meaningful involvement of stroke survivors and caregivers in the development of national, regional and global policy.

Treatment, rehabilitation, and indirect costs for stroke are nearing the trillion dollar mark.

In 2017, the cost of stroke to the global economy has reached **US\$891 billion** (about 1.12% of the global GDP)

and is likely to continue growing if the current trends in stroke burden continues.



A WHO survey showed that

only 38% of Member States

had explicitly included stroke in their NCD response and preparedness plans.

Only 3% had explicitly allocated funds for these efforts.



Advocacy priority 5 – Action and accountability

WSO calls for bolder actions from both governmental and non-governmental organisations, including taxation from sugar loaded drinks, tobacco and alcohol (STAX) towards improving stroke treatment, prevention and rehabilitation services and to enhance population-based prevention programmes. WSO supports and advocates for the development and delivery of evidence-based comprehensive measures that encompass prevention, acute care, rehabilitation and support. WSO develops and provides guidance and support to members, partners and stakeholders to support national advocacy and works with national and regional members and global partners to advance strategies and ensure accountability for government action on their international commitments in relation to investment in NCD prevention, universal health coverage and participation.





Table of Contents

Key messages and top WSO priorities	2
About WSO	5
Knowledge	6
What is stroke?	6
Stroke in numbers	6
Patient quotes	7
Our Advocacy Priorities	8
Why advocacy matters	8
Global policy relevant to stroke advocacy	8
Key advocacy priorities	9
<i>Advocacy priority 1 – Stroke Prevention: Supporting the Implementation of population-wide prevention strategies for stroke and NCDs, including dementia</i>	10
<i>Advocacy priority 2 – Stroke Recognition: Improving knowledge in the population of symptoms of stroke and on the benefits of timely admission to hospital</i>	11
<i>Advocacy priority 3 – Quality Stroke Services</i>	11
<i>Advocacy priority 4 – Stroke Rehabilitation and Recovery: improving long-term support for patients and carers after a stroke</i>	12
<i>Advocacy priority 5 – Action and accountability: supporting the development and delivery of comprehensive stroke action plans by governments</i>	12
Advocacy success stories	13
<i>NEW ICD-11 classification</i>	13
<i>Inclusion of tPA in the WHO Model List of Essential Medicines (EML)</i>	13
<i>High global outreach</i>	14
<i>Lessons learned from Covid-19</i>	14
Implementing advocacy priorities	15
Enabling factors	15
Global resources developed by WSO and partners	16
WSO Declaration on the global prevention of stroke and dementia	16
NCDA Policy White Paper	16
Global Coalition for Circulatory Health (GCCH) Papers	16
Primary Stroke Prevention Worldwide: translating evidence into action	17
WSO Policy Statement	17
Our Partners	18
Regional stroke organisations	18
Global Health Organisations	18
References	19

About WSO

Today, more than ever, WSO is the leading global voice for stroke. WSO membership spans 95 countries and includes more than 3,200 individual members and over 100 society members. WSO's Board and Committees have a global composition and represent all geographical regions. WSO acts, advocates and advises to reduce the global burden of stroke.

The interconnectedness between stroke and other noncommunicable diseases, including CVD, dementia, diabetes and even cancer are increasingly clear and intersect with some of the most pressing issues confronting our society - such as climate change, air pollution, education, poverty and nutrition. These

interconnections and intersections demand multi-sectoral solutions that require engagement and collaboration with other global organizations.

The WSO vision of "A life free of stroke" captures the organization's aspiration and motivation in relation to prevention, treatment, rehabilitation, long-term care and support, and acts as a marker point for its work with others who share our purpose.

WSO is supported in this goal by a set of strategic objectives that span education, good practice and research, capacity building and awareness and advocacy.



Education, Good Practice & Research

- Fostering the best standards of practice
- Preventing new onset stroke and subtle cerebrovascular disease leading to gait disorders, imbalance, vascular cognitive impairment and behavioural changes
- Providing education in collaboration with public and private organizations



Capacity building

- Fostering the development of systems and organisations for long term support of stroke survivors and their families
- Supporting organisations to identify stroke care needs and to develop advocacy strategies
- Enabling knowledge exchange and networking between stroke organisations

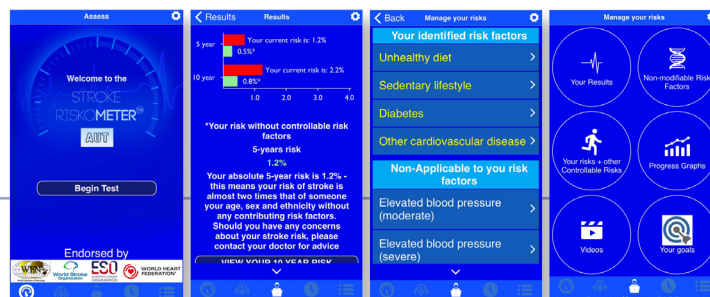


Awareness and Advocacy

- Increasing stroke awareness among the population and among health professionals
- Influencing policies for stroke prevention and improved health services
- Facilitating stroke advocacy for and with people with stroke

The WSO World Stroke Congress, the World Stroke Academy, Educational webinars, the Future Stroke Leaders programme, the World Stroke Day Campaign, the World Stroke Connector, the International Journal of Stroke, the free Stroke Riskometer app' and many other activities all support WSO's vision, mission and strategic objectives.

Already translated into 19 languages covering 5.3 billion people in their native languages.



Knowledge

What is stroke?



Stroke occurs when the blood supply to the brain is disrupted, causing oxygen starvation, brain damage, and loss of function. It is most frequently caused by a clot in an artery supplying blood to the brain, a situation known as ischemia. It can also be triggered by a haemorrhage, which occurs when a blood vessel in the brain bursts and blood leaks into the brain. Strokes can result in lasting damage, including partial or complete paralysis, difficulties with speech, comprehension, and memory/cognition. The extent and location of the damage determines the severity of the stroke, which can range from minimal to catastrophic.

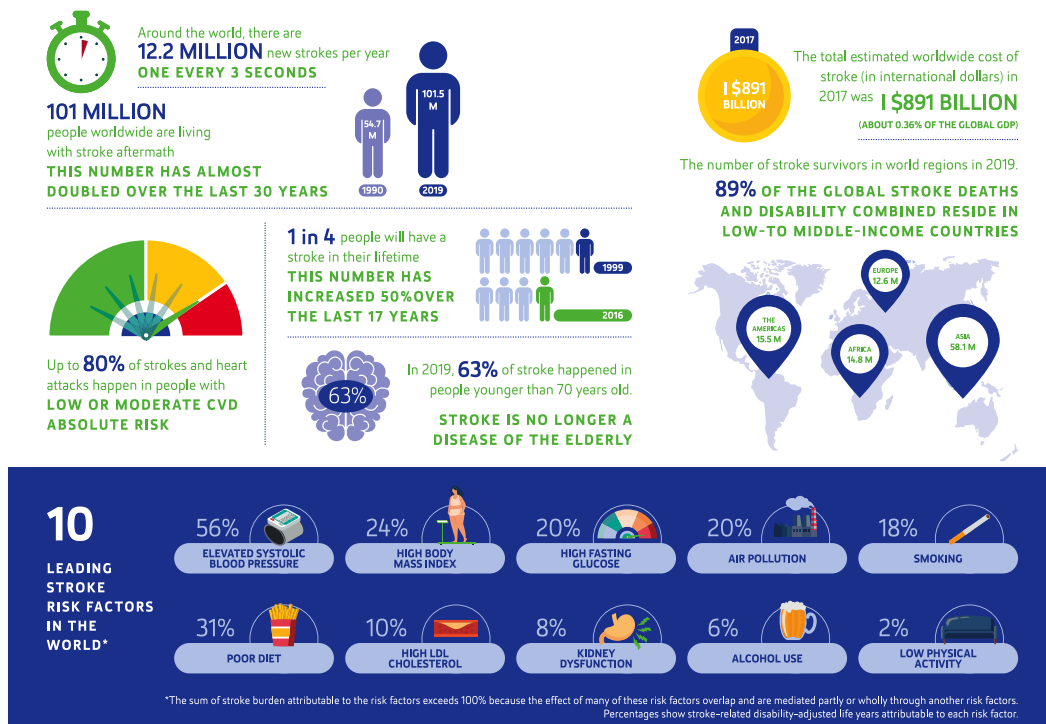
Many stroke survivors face significant challenges that include physical disability, communication difficulties, changes in how they think and feel alongside loss of work, income, independence and social networks.

Stroke in numbers (1-5)

In 2019, 12.2 million people worldwide suffered a stroke; 6.6 million died, making stroke the second-leading cause of death in the world. 101 million individuals around the world have experienced stroke and live with stroke aftermath. Projections show that this figure will continue to rise dramatically in the coming decades. Furthermore, 143 million years of healthy life were lost due to stroke related death and disability. Stroke is gaining ground globally – over the past 10 years the lifetime risk of stroke in adults over 25 has increased from 1 in 6 to 1 in 4⁽⁵⁾, implying that globally, one in every four people over 25

will have a stroke in their lifetime. Worryingly, incidence, mortality and prevalence rates have risen among people younger than 70 years over the past decades. The burden of stroke disproportionately affects individuals in Low- and Middle-Income Countries (LMICs). Between 1990 and 2019, stroke-related DALYs attributable to risk factors increased by 48% in LMICs whilst they declined by 25% in HICs. Strokes also occur about 15 years earlier among individuals in LMICs than in HICs, leading to a marked negative impact on socioeconomic development as people are most affected at the peak of their productive lives.

TOP TEN GLOBAL RISK FACTORS FOR STROKE



All risk factors combined account for 87.0% of the global stroke burden. With such a significant part of strokes being preventable, every US\$1 spent on prevention of stroke and cardiovascular disease yields a return on investment of over \$10⁽³⁾.

”

After my stroke I could not walk or talk and I was bedridden. I lost everything. After some time, I went to the Stroke Action Life after Stroke Centre. I am now improving in my stroke recovery. I am now a Stroke Ambassador and I am learning to get involved in stroke advocacy.

Irene Tanasi, Stroke Action, Nigeria



”



The Japan Stroke Association presented a report to policy makers highlighting the voices of people affected by stroke. The report made a deep impression, with people calling it heart-wrenching and that before they read it they had not truly seen what stroke survivors face.

*Mr. Hiroyuki Kawakatsu,
Japan Stroke Association*

”

Having a stroke changed my life. There is no question about that. I have to live my life differently and make adjustments to ensure I am able to manage the challenges I face. As someone with a positive disposition for life, I wanted to create something that I felt was missing for survivors. Enabling survivors to become more active and to engage in exercise will support their physical rehabilitation, and in turn, will have a positive impact on their mental and emotional wellbeing.'

Craig Pankhurst, A Stroke of Luck, UK



Our Advocacy Priorities

Why advocacy matters

A major part of WSO's work is policy advocacy which is the process of informing and influencing decision-makers in support of evidence-based policy change and policy implementation.

Stroke recovery can be maximized by reducing stroke risks and increasing awareness about the consequences and importance of having a good healthcare system.

Through its policy advocacy work, WSO supports its members and other global health organizations in raising community awareness about stroke and advocating for improved public policies and health systems to address stroke.

Global policy relevant to stroke advocacy

WSO's advocacy work occurs in the context of relevant global policy, principally the following:

2015

United Nations Member States adopted the 2030 Sustainable Development Goals (SDGs), which include several targets related to NCDs and, therefore, stroke:



Target 3.4:



1/3

By 2030, reduce by 1/3 premature mortality from noncommunicable diseases through prevention and treatment and promote mental health and well-being



Target 3.a:



Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate



Target 3.8:

Countries commit to achieving Universal Health Coverage (UHC), including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all



2018

At the 2018 UN High Level Meeting on NCDs, Heads of State and Government signed a political declaration extending the so-called '4x4' policy approach to NCDs, to a new '5x5' approach.

5 Diseases:



cardiovascular disease



cancers



diabetes



chronic respiratory disease



mental and neurological conditions

5 Risk factors:



tobacco use



alcohol use



unhealthy diet



insufficient physical activity



air pollution

2018

WHO, The Lancet, the NCD Alliance, and other flagship organisations launched the NCD Countdown 2030, which builds on the 25x25 campaign and aims to reduce NCD mortality by

30% by 2030.



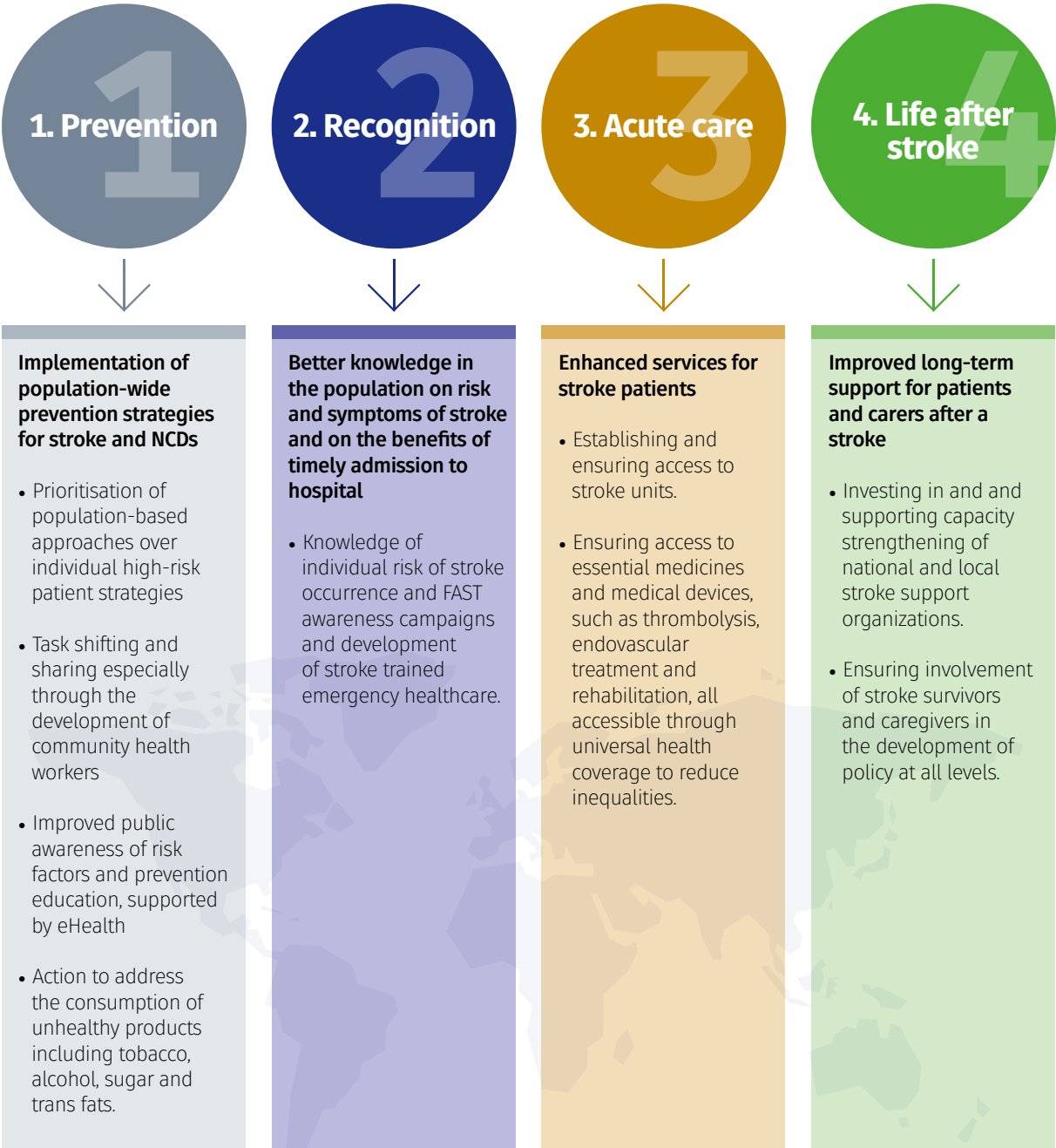
Other relevant global policies, initiatives and frameworks include:

- WHO Global action plan for the prevention and control of NCDs 2013-2030, and the upcoming Implementation Roadmap 2023-2030 for the Global action plan for the prevention and control of NCDs 2013-2030.
- WHO Framework Convention on Tobacco Control (FCTC)
- WHO Global Hearts Initiative
- WHO Global action plan on the public health response to dementia 2017 - 2025
- WHO Global action plan on physical activity 2018-2030
- WHO and World Bank Group Systems for Universal Health Coverage – a Joint Vision for Healthy Lives
- The United Nations Decade of Action on Nutrition
- The United Nations Framework Convention on Climate Change

WSO's global policy work focuses on advocating for stroke's specific needs within this broader policy context. Under the guidance of its Global Policy Committee and its Executive Board, WSO works with global advocacy partners to develop and submit written and oral statements, as well as prepare policy briefs and white papers.

Key advocacy priorities

An order to advance stroke’s specific needs within this broader context, WSO has defined five key advocacy priorities that span across prevention, detection, acute care and rehabilitation. These advocacy priorities support the realization of WSO’s strategic objectives.



5. Action and accountability

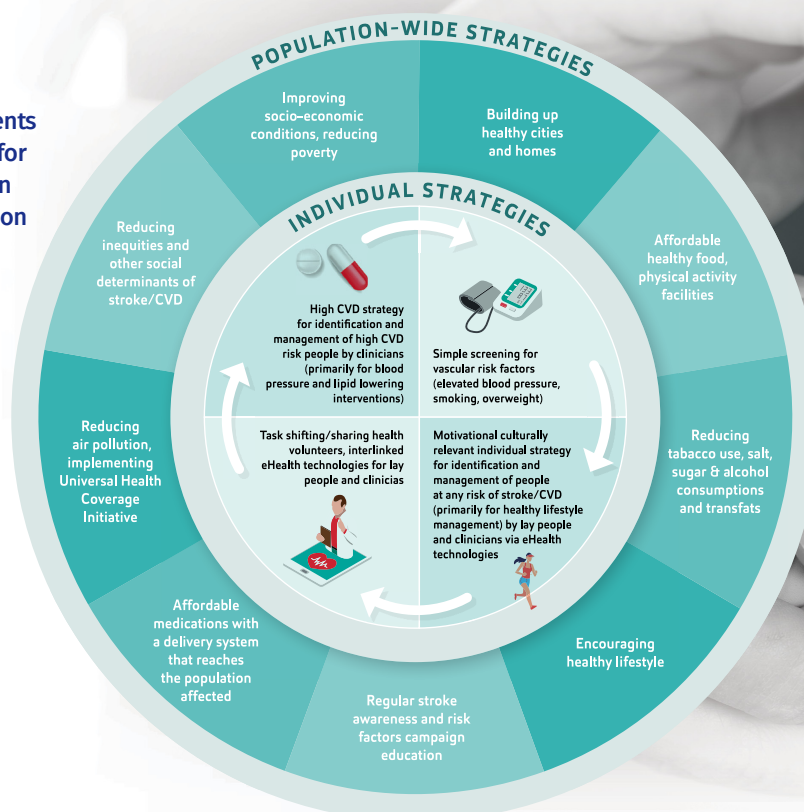
Development and delivery of comprehensive stroke action plans by governments
 Using existing frameworks developed by global stroke experts and patient groups to guide policy decisions on all aspects of stroke including prevention, detection, treatment, and long-term care.

Advocacy priority 1 – Stroke Prevention: Supporting the Implementation of population-wide prevention strategies for stroke and NCDs, including dementia

Cutting Stroke in Half is WSO's flagship advocacy initiative with a focus on prevention. The global burden of stroke is increasing year after year: if current trends persist, by 2050 about 200 million stroke survivors are to be expected, and each year thereafter, over 30 million new strokes, and 12 million deaths from stroke. Similarly, the global burden of dementia, which shares common and reciprocal risks with stroke, is also increasing. By 2050, an estimated 106 million people could be living with dementia, which could cause nearly 5 million deaths dementia year. Recognizing the commonality and reciprocity of stroke and dementia risk, a joint prevention strategy is urgently recommended. In a radically new approach, the **WSO Declaration on the global prevention of stroke and dementia**⁽⁶⁾ highlights the need for action in low- and medium-risk populations, who will ultimately represent 80% of the stroke and cardiovascular disease burden. With an emphasis on low- and middle-income countries where stroke is not only more prevalent but has the most devastating impact, key principles of this strategy include:

1. Adopting population wide strategies that reduce exposure to stroke risk factors such as hypertension, new and traditional forms of tobacco use, harmful use of alcohol and unhealthy diet, as well as action to address environmental risk factors, including air pollution, across the lifespan of the whole population.
2. Abandoning categorisation of people into low, moderate, and high risk; abandoning high CVD risk treatment thresholds for blood pressure and lipid lowering therapies; advocating a holistic prevention approach for all people at risk of stroke
3. Implementing and promoting motivational mobile technologies, e.g. the WSO endorsed free Stroke Riskometer to identify individual risks and support action on lifestyle risk factors among adults.
4. Facilitating access to low dose combination of generic blood pressure and lipid-lowering therapies in one polypill for middle age and older adults with at least two behavioural or clinical stroke risk factors.
5. Investing in the training and deployment of community health workers to facilitate implementation.

Action plan for governments and other policy makers for primary stroke prevention measures at the population (ie, socioeconomic, environmental, and behavioural) and individual levels.





Advocacy priority 2 – Stroke Recognition: Improving knowledge in the population of symptoms of stroke and on the benefits of timely admission to hospital

Through its World Stroke Campaign, WSO advocates throughout the year in partnership with members and partners to raise awareness of key issues in stroke prevention, treatment and life after stroke issues.

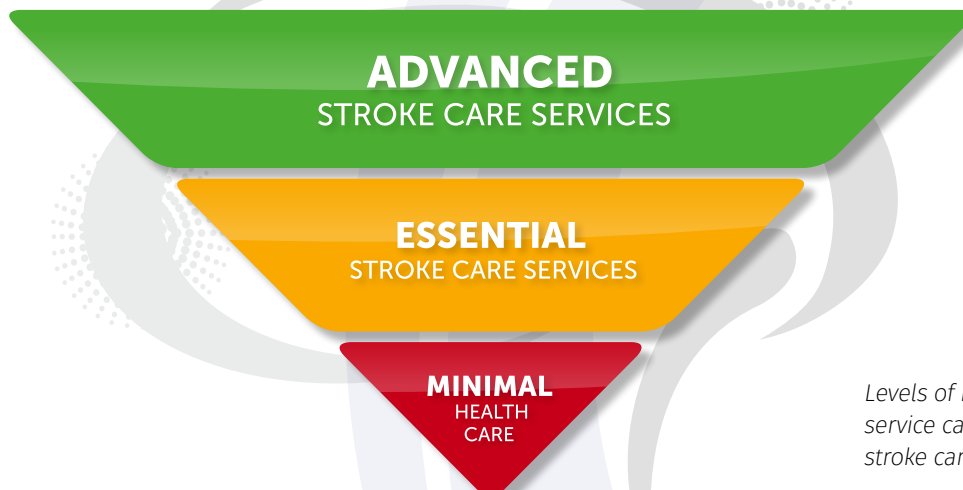
In 2006, WSO also established the World Stroke Day, which takes place on October 29th every year. The global awareness day provides a coordinated global platform for the stroke community to increase public awareness of stroke symptoms and stroke prevention.

In 2021, the WSO launched the 2-year #Precioustime campaign aimed to raise public awareness of stroke symptoms and of the importance of seeking emergency medical treatment if stroke is suspected. This global campaign launched a simple call to action: learn the signs, say it's a stroke and save #Precioustime. The 2021 campaign reached 2.3 billion people across the world. Resources developed for the campaign are available in multiple languages and can be used throughout the year.




Advocacy priority 3 – Quality Stroke Services (7-9)

The third advocacy pillar of WSO focuses on enhanced services for stroke patients, notably by establishing and ensuring access to stroke unit care, essential medicines and medical devices and supported by universal health coverage to reduce inequalities. Well-organized stroke care can significantly reduce morbidity and mortality from stroke. For example, stroke unit care increases the chance of functional independence by 14%. Organized stroke unit care is the foundation stone for administration of clot-busting drugs (tPA or thrombolysis) which increases the chance of a good outcome by 30%. and for clot retrieval treatment (thrombectomy) which increases the chance of a good outcome by more than 50%.



Levels of health service capacity for stroke care.

To guide local healthcare officials and stroke care clinical groups in establishing stroke systems of care, WSO has developed a *Global Stroke Services Guideline and Action Plan*⁽⁸⁾ and its companion *WSO Roadmap to Delivering Quality Stroke Care*⁽⁹⁾. These resources include a Framework focusing on the continuum of care starting from the onset of stroke signs and symptoms all the way through to rehabilitation and reintegration into the community. This framework strives to guarantee that each patient has timely access to appropriate stroke services and treatments by identifying three levels of service delivery.

 Minimal stroke care delivery	<i>Stroke care delivery is based at a local clinic staffed predominantly by nonphysicians. Laboratory tests and diagnostic studies are scarce, and much of the emphasis is placed on bedside clinical skills, teaching, and prevention</i>
 Essential stroke care delivery	<i>Essential stroke care delivery offers access to a CT scan, physicians, and the potential for acute thrombolytic therapy, however stroke expertise may still be difficult to access</i>
 Advanced stroke care delivery	<i>Advanced stroke care services offer multidisciplinary stroke expertise, multimodal imaging, and comprehensive therapies.</i>

These resources also include a stroke clinical practice guideline which contains a core set of stroke care recommendations, and key quality indicators have been established through a rigorous review and adaptation process.

These resources are available to WSO members to support the establishment of stroke systems of care in their respective contexts. Even though not all essential components of stroke services are in place or accessible, all regions are encouraged to use this Action Plan to identify their goals for stroke care delivery and design a strategy to achieve those goals over time. An online tool is now available to support self-assessment and the identification of priorities for service improvement in all resource settings.



Advocacy priority 4 – Stroke Rehabilitation and Recovery: improving long-term support for patients and carers after a stroke

The fourth advocacy priority for WSO relates to the long-term support of people affected by stroke - 101 million people today. Stroke support organizations are now the largest organizational membership group of WSO. The organization supports their establishment and capacity strengthening to provide evidence-based services and to advocate for the needs of stroke survivors and caregivers. WSO also works to ensure that the voices of survivors and caregivers are heard in relevant regional and global policy discussions.

Stroke survivors and caregivers from each region of the world developed the *Global Stroke Bill of Rights* in collaboration with WSO. The Bill of Rights identifies the key aspects of care that are important across the care continuum for ALL stroke survivors and caregivers. It is a tool that can be used by individuals and organizations to communicate with policy makers about what people affected by stroke think are the most important things in their recovery.



Advocacy priority 5 – Action and accountability: supporting the development and delivery of comprehensive stroke action plans by governments

WSO advocates for the development and delivery of comprehensive stroke action plans by governments, that span the care continuum from prevention, acute care to rehabilitation and support. WSO encourages the use of existing frameworks developed by global stroke experts and patient groups to guide policy decisions on all aspects of stroke along the continuum of prevention and care. The organization delivers policy engagement events, contributes to research to support evidence based policy and has developed a set of guides and statements with and on behalf of members and partners to support local, regional and global policy and advocacy activities.



Advocacy success stories

Some recent milestone advocacy achievements include the inclusion of tPA in the WHO Model List of Essential Therapies for Stroke and the correct classification of stroke as a brain disease in WHO ICD 11.

NEW ICD-11 classification

After officially categorizing stroke as a Disease of the Circulatory System for sixty-two years, the newly published WHO ICD 11 has correctly classified stroke as a Disease of the Nervous System.

The International Classification of Diseases and Related Health Problems (ICD) is a foundation document for health policy and treatment globally. In 1955, cerebrovascular diseases were reclassified as circulatory system diseases in ICD 7. Over the past six decades, this decision has skewed statistics because the 15 million people who had a stroke each year were included under the rubric of circulatory diseases.

According to Bo Norrving, Immediate Past Chair of WSO's Global Policy Committee, who also chaired the Cerebrovascular Diseases group for the ICD 11 "Because stroke was classified as a disease of the circulatory system, it has remained hidden in the shadows". The incorrect classification of stroke led to delay in resource allocation and training of medical, radiological, and nursing staff who know how to deal with brain diseases. In its latest revision of the ICD (ICD 11), the WHO Department of Information, Evidence, and Research decided to shift all cerebrovascular diseases to the section of diseases of the nervous system. After actively advocating for the change, arguing that reclassifying stroke as a brain disease would support global efforts to increase stroke recognition and improve access to services and treatments that save lives and reduce post-stroke disabilities, WSO applauded this decision. "We are delighted about this decision. More light can now be shed on the characteristics of stroke and there will be new opportunities to improve prevention and treatment. We believe that the recognition of stroke as a disease of the brain and the grouping all types of cerebrovascular diseases into a single block in the ICD 11 will direct policy attention to the relevant issues and enable us to develop 21st century services for stroke", Bo Norrving explains.

Inclusion of tPA in the WHO Model List of Essential Medicines (EML)

In the last 25 years, several studies have shown the efficacy of alteplase for acute ischemic stroke. If given within three hours, about one in four patients will have a reduced long-term handicap.

Even with this important reduction in brain damage, alteplase is still only available in two thirds of countries and is underutilised in low- and middle-income countries. In order to increase access and use of thrombolysis around the globe, WSO assembled 13 stroke experts from five continents under the leadership of Patrik Michel (Switzerland) and Michael Brainin (Austria). In 2018, this group submitted a 30-page application to the WHO for alteplase to be included in the EML.

This application was successful and, as a result, alteplase was included in the 21st EML in 2019 for use in specialized diagnostic or monitoring facilities and with specialist medical care.

This addition of alteplase in the EML is a significant step forward in stroke treatment worldwide, particularly in less affluent countries. All UN-member states are now encouraged to provide thrombolysis at a reasonable cost or for free, such as through Universal Health Coverage (UHC)

one voice

High global outreach

Global coverage of stroke education and prevention materials

WSO Don't Be The One posts on social media were attended by over 5 million visitors. The Stroke Riskometer app has been endorsed by the World Stroke Organization, World Federation of Neurology, World Heart Federation, European Stroke Organisation and a number of national stroke organisations, including Australian Stroke Foundation, French Neuro-Vascular Society, and Chinese Stroke Society to name a few. Being available in 19 languages (English, Bengali, Bulgarian, Chinese [Mandarin], Croatian, Czech, French, German, Greek, Hindi, Italian, Malay, Nepali, Portuguese, Brazilian-Portuguese, Russian, Spanish, Swedish, Thai) this free mobile stroke education and prevention tool is already available to 5.3 billion people in their native languages. At the recent Latin American summit of Health Ministers, the Stroke Riskometer™ app was recommended for implementation across all Latin American countries.

Lessons learned from covid-19 ^(10, 11)

The COVID-19 pandemic has significantly affected health systems globally. Millions of people living with NCDs have suffered severe physical, mental, and financial consequences. According to WHO surveys, while nearly every participating Member State reported moderate to severe disruptions in essential NCD services, only 38% had explicitly included NCDs in their response and preparedness plans, and only 3% had explicitly dedicated funds. In the next future, the combined effects of COVID-19-related cardiovascular complications and interruptions in critical medical interventions and ongoing care for people living with chronic conditions – those at highest risk of poor COVID-19 outcomes – will exacerbate the massive burden faced by stretched health systems around the world. WSO and other Global Coalition for Circulatory Health members have emphasized the necessity of emergency preparedness and issued recommendations to manage post-pandemic effects. Current WSO advocacy work aims to support their dissemination and implementation around the world.

GCCH Recommendations

- *As a first step, prevent, screen, and treat for circulatory conditions through national COVID-19 response and recovery plans via concerted patient co-creation and collaboration*
- *Increase spending and develop targeted policies to tackle stroke and CVD and NCD risk factors*
- *Include indicators on circulatory disease prevalence, co-morbidities, and risk factors into measures of pandemic readiness, resilience, and response*
- *Ensure people living with circulatory conditions and in low-resource settings have good and equitable access to essential health services*
- *Provide easy priority access to vaccination and other disease prevention methods for those with underlying circulatory risk factors*
- *Support and integrate the use of effective new models to deliver quality health services, especially telemedicine and initiatives to support self-care and self-empowerment*

Implementing advocacy priorities

Enabling factors

These success stories are the result of sustained and concerted advocacy efforts, led by well-respected key opinion leaders. Advancing WSO's five current advocacy priorities will necessitate WSO's leadership commitment to our advocacy priorities, building strong coalitions with other stakeholders, particularly other health organizations, gaining support and recognition from governments and policy-makers, translating global issues into national/local issues and acquiring an in-depth knowledge of the specific context in which policies WSO recommends are to be implemented.

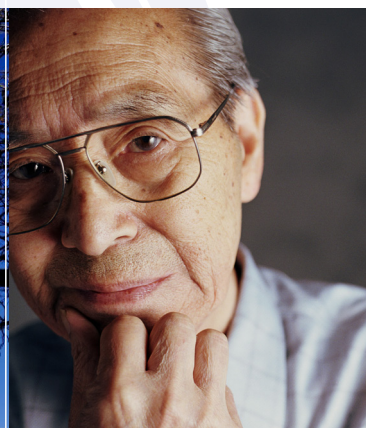
Key elements to make sure the voice of the stroke community is heard include the ability to:

- Raise awareness, using all opportunities to effectively communicate messages,
- Create messaging that speaks to the heart as well as the mind,
- Produce targeted advocacy tools and toolkits whenever relevant,
- Train WSO members on how to communicate with decision-makers,
- Develop a grassroots strategy to ensure that WSO advocates – members, SSOs, individuals – can easily connect with their local or national policy-makers.



How could success be measured in the future?

- Are we being consulted on policies before/while they are drafted?
- How are achievements faring against planned actions?
- How is our reputation among high-level decision-makers?



Global resources developed by WSO and partners

WSO Declaration on the global prevention of stroke and dementia ⁽⁶⁾

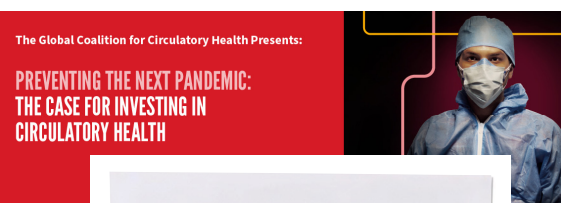
WSO has recently published a radical strategic framework aimed at transforming the prevention of stroke and dementia. The WSO Declaration on Global Prevention of Stroke and Dementia, published in The Lancet Neurology, recognizes the commonality and reciprocity of stroke and dementia risks and calls for governments and policymakers to take immediate action to address the limitations of the current prevention strategy.

NCD Policy White Paper⁽¹²⁾

In collaboration with the NCD Alliance and the American Stroke Organization, WSO produced a policy brief which explores the impact of stroke in society, highlighting the need for awareness on how to prevent and treat stroke before, during and after its occurrence. It also provides key actions that health systems, care providers and civil society can implement to improve the response to stroke and NCDs, based on a comprehensive and integrated approach.



Global Coalition for Circulatory Health (GCCH) Papers



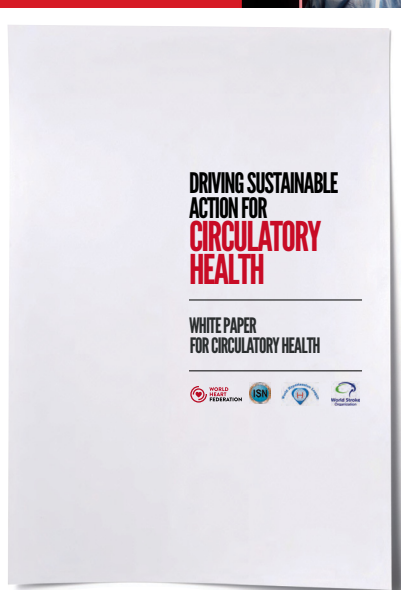
The Global Coalition for Circulatory Health (GCCH), formed in 2017, is the only network of international, regional and national health organizations advocating for increased prevention, control and treatment of all circulatory diseases.

White Paper – Delivering Sustainable Action for Circulatory Health ⁽¹³⁾

In 2018, WSO and other partners in the GCCH launched a key White Paper – Delivering Sustainable Action for Circulatory Health. The document provides an overview of the global burden of CVD and stroke and identifies interventions and investments that governments can take to reduce personal and social costs of CVD and stroke.

Position paper: Preventing the next pandemic: the case for investing in circulatory health ⁽¹⁰⁾

In 2021, WSO together the members of GCCH launched a Position Paper providing a clear rationale and actionable proposals for Member States to include measures to address circulatory health in emergency preparedness plans.



Primary Stroke Prevention Worldwide: translating evidence into action⁽³⁾

This health policy paper, published in The Lancet Public Health in October 2021, provides an overview of the current situation regarding primary prevention services, estimates the cost of stroke and stroke prevention, and identifies deficiencies in existing guidelines and gaps in primary prevention. It also offers a set of pragmatic solutions for implementation of primary stroke prevention, with an emphasis on the role of governments and population-wide strategies, including task-shifting and sharing and health system re-engineering.

WSO Policy Statements

WSO's Global Policy Committee works with WSO members to formulate formal submissions to global and regional formal consultation processes and key health and development policy meetings. WSO provides guidance for members to use in their communication with national governments ahead of global policy meetings. WSO also collaborates with international partners on the preparation of joint-statements and the delivery of events that aim to improve understanding and drive effective action on stroke prevention, treatment and recovery.

In a recent joint position statement of WSO, World Heart Federation and Global Coalition for Circulatory it was emphasised that currently used absolute risk-based strategies for individual primary stroke and CVD prevention are not sufficiently effective and should be modified. National and international guidelines for primary stroke and CVD prevention on the individual level should not include absolute CVD risk treatment thresholds for blood pressure and lipid lowering pharmacological treatment, and categorisation of people into low, moderate (mild) and high absolute CVD risk (including use of risk-stratified heat-maps) when communicating risk should be abandoned. More effective and widely applicable motivational preventative strategies, with emphasis on lifestyle modification, should be developed and implemented for people at any level of increased risk of stroke and CVD. Affordable, evidence-based and far-reaching digital technologies for both clinicians and lay people are the key for effective primary stroke and CVD prevention.



Our Partners

Regional stroke organisations

The biggest challenge in the U.S. is the tremendous geographic variability in access to high quality stroke care. Despite huge advances in acute care and secondary prevention, many patients do not have an equal opportunity to benefit. The WSO can help us by establishing global standards for access to care and prioritizing health equity, and the American Stroke Association is an enthusiastic partner in this endeavor.

Lee Schwamm, M.D., Chairman, American Stroke Association Advisory Committee.

The major challenge operating on a transnational scope is the alignment and harmonization across the different countries. The stroke landscape is not homogenous and displays disparities in the provision of treatment and care. It is important for ESO to align its projects and initiatives to be suitable and actionable for as many of our members as possible. The WSO can support our mission through dissemination of our work on a global scale and through the allocation of development funds.

Prof. Martin Dichgans, President 2020-2022, European Stroke Organisation (ESO).

The main challenge in Asia is the difference in resources and environments of each country related to stroke and its care. Support and collaboration for less-resourced countries for balanced development in stroke care quality, human resource development, and academic research is needed to address this. A more active dialogue between the WSO and the APSO is needed to set global standards for equitable and holistic access to stroke care and to enhance education collaboration.

Prof. BW Yoon, President 2021 – 2023, Asia Pacific Stroke Organization (APSO).

The main challenges in LATAM are twofold: A) to develop and apply evidence-based national global stroke care plans that include registry and quality control of care, implementation and certification of stroke centers, promotion of reperfusion therapies, and continuous education. B) To promote primary and secondary stroke prevention aiming at those risk factors that have higher PAR (hypertension, obesity, sedentarism, unhealthy diet) in this region using novel strategies such as polypills, individual risk factor evaluation tools, and implementation of programs such as the HEARTS initiative. WSO can help supporting national and regional stroke organizations, promoting collaboration with health authorities and other stakeholders and supporting young stroke leadership in the region.

Carlos Cantu, President and Pablo Lavados, Vice-President 2020-2022 SIECV - IberoAmerican Stroke Organization

Africa carries a huge burden of stroke. Faced with a rapidly increasing burden of vascular risk factors, in a milieu of poor surveillance and prevention programmes, weak health infrastructure and paucity of competent healthcare providers for preventive, acute and rehabilitative stroke care, high mortality and poor functional outcomes following stroke are prevalent in Africa. To overcome the huge challenge of stroke in Africa, we have proposed the 'stroke quadrangle' which has four key pillars: surveillance, prevention, acute care and rehabilitation. We have also founded the African Stroke Organization (ASO). WSO can help defeat stroke in Africa by working with the ASO initiatives in the region and strengthening other regional and global programs in a concerted manner.

Dr. Rufus Akinyemi and Prof Mayowa Owolabi, on behalf of the African Stroke Organization (ASO).

Stroke is one of the leading cause for disability in the MENA region. Over the last decade we noticed that more young people are getting stroke in the region. These young victims usually are suffering from early high blood pressure, diabetes mellitus, smoking and overweight. These 4 medical problems make young population in our region to be at high risk of all subtypes of stroke. 40-45 % of stroke in the MENA region is younger than 50 years old. The future roadmap for "MENA Stroke Organisation 2030" is to build more awareness of stroke signs and risk factors, and to involve different regional bodies in this initiative. WSO is the leading organisation, and we need more support and involving in the MENA region.

Dr. Suhail Abdulla Alrukn, President, MENASO.

Global Health Organisations

WSO actively collaborates with global organizations and partnerships such as the World Health Organization, the United-Nations, the NCD Alliance, The Global Coalition for Circulatory Health, One Neurology Initiative and others.



References:

1. Feigin V, Brainin M, Norrving B, Martins S, Sacco RL, Hacke W, et al. World Stroke Organization (WSO): Global Stroke Fact Sheet 2019. *Int J Stroke*. 2021; UNDER REVIEW.
2. Brainin M, Feigin V, Norrving B, Martins S, Hankey GJ, Hachinski V, et al. Global, regional, and national burden of stroke and its risk factors, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019. *Lancet Neurol*. 2021;20(10):795-820.
3. Owolabi MO, Thrift AG, Mahal A, Ishida M, Martins S, Johnson WD, et al. Primary stroke prevention worldwide: translating evidence into action. *The Lancet Public Health*. 2021.
4. GBD 2019 Stroke Collaborators. Global, regional, and national burden of stroke and its risk factors, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019. *Lancet Neurol*. 2021;20(10):795-820.
5. Feigin VL, Nguyen G, Cercy K, Johnson CO, Alam T, Parmar PG, et al. Global, Regional, and Country-Specific Lifetime Risks of Stroke, 1990 and 2016. *N Engl J Med*. 2018;379(25):2429-37.
6. Brainin M, Feigin VL, Norrving B, Martins SCO, Hankey GJ, Hachinski V. Global prevention of stroke and dementia: the WSO Declaration. *Lancet Neurol*. 2020;19(6):487-8.
7. World Stroke Organization. *Face the facts: Stroke is Treatable*. 2016.
8. Lindsay P, Furie KL, Davis SM, Donnan GA, Norrving B. World Stroke Organization global stroke services guidelines and action plan. *Int J Stroke*. 2014;9 Suppl A100:4-13.
9. Lindsay P, Norrving B, Furie KL, Donnan GA, P L, Davis SM, et al. *Global Stroke Guidelines and Action Plan: A Road Map for Quality Stroke Care - Roadmap Implementation Guide*. Geneva, Switzerland: World Stroke Organization; 2016.
10. Ferat LR, Forrest R, Sehmi K, Santos RD, Stewart D, Boulton AJM, et al. Preventing the Next Pandemic: The Case for Investing in Circulatory Health - A Global Coalition for Circulatory Health Position Paper. *Glob Heart*. 2021;16(1):66.
11. Pandian JD, Panagos PD, Sebastian IA, Sampaio Silva G, Furie KL, Liu L, et al. Maintaining stroke care during the COVID-19 pandemic in lower- and middle-income countries: World Stroke Organization Position Statement endorsed by American Stroke Association and American Heart Association. *Int J Stroke*. 2021;17474930211055878.
12. NCD Alliance. *Acting on Stroke and NCDs: An integrated response through people-centred health systems*. 2018.
13. Global Coalition for Circulatory Health. *Driving Sustainable Action for Circulatory health - White Paper for Circulatory Health*. Geneva, Switzerland: Global Coalition for Circulatory Health; 2018.



one voice
one world voice for stroke



World Stroke
Organization

World Stroke Organization
7, rue Francois Versonnex, PO Box 6053
CH-1211 Geneva 6, Switzerland
Tel: +41 22 906 9166
Email: admin@world-stroke.org

www.world-stroke.org